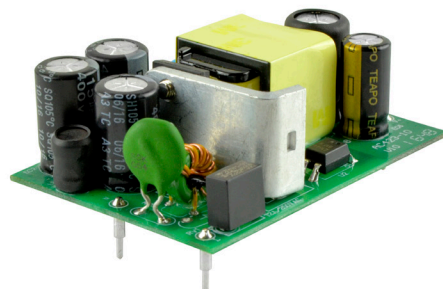



SERIES: VOF-20B | **DESCRIPTION:** AC-DC POWER SUPPLY

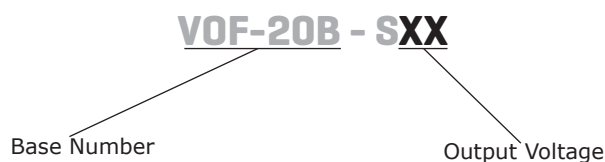
FEATURES

- up to 20 W continuous power
- universal input: 85~264 Vac
- compact open-frame design
- single output from 5 Vdc ~ 48 Vdc
- short circuit, over voltage protection, over current protection
- 4000 Vac isolation
- no load power consumption <100 mW



| MODEL | output voltage | output current | output power | ripple and noise ¹ | efficiency |
|-------------|----------------|----------------|--------------|-------------------------------|------------|
| | (Vdc) | max (A) | max (W) | typ (mVp-p) | typ (%) |
| VOF-20B-S5 | 5 | 3.5 | 17.5 | 100 | 82.85 |
| VOF-20B-S9 | 9 | 2.1 | 18.9 | 100 | 85.70 |
| VOF-20B-S12 | 12 | 1.6 | 19.2 | 120 | 85.77 |
| VOF-20B-S15 | 15 | 1.3 | 19.5 | 150 | 85.85 |
| VOF-20B-S24 | 24 | 0.85 | 20.4 | 240 | 86.06 |
| VOF-20B-S48 | 48 | 0.42 | 20 | 480 | 86.00 |

Notes: 1. At full load, nominal input, 20 MHz bandwidth oscilloscope, output terminated with 10 μ F electrolytic and 0.1 μ F ceramic capacitors.
2. All specifications are measured at $T_a=25^\circ\text{C}$, nominal input voltage, and 75% rated output load unless otherwise specified.

PART NUMBER KEY


INPUT

| parameter | conditions/description | min | typ | max | units |
|---------------------------|------------------------------|-----------|-----|------------|------------|
| voltage | | 85 120 | | 264 370 | Vac Vdc |
| frequency | | 47 | | 63 | Hz |
| current | | | | 0.5 | A |
| inrush current | at 240 Vac, 25°C, cold start | | | 70 | A |
| leakage current | | | | 0.25 | mA |
| no load power consumption | | | | 0.10 | W |

OUTPUT

| parameter | conditions/description | min | typ | max | units |
|----------------------------|------------------------------------|-----|-------|-------|-------|
| capacitive load | 5 Vdc output model | | | 3,500 | μF |
| | 9 Vdc output model | | | 2,100 | μF |
| | 12 Vdc output model | | | 1,600 | μF |
| | 15 Vdc output model | | | 1,300 | μF |
| | 24 Vdc output model | | | 850 | μF |
| | 48 Vdc output model | | | 420 | μF |
| initial set point accuracy | at full load, 25°C | | ±2 | | % |
| line regulation | high line to low line at full load | | ±0.5 | | % |
| load regulation | 10%~100% load | | ±1 | | % |
| hold-up time | at 115 Vac | | 12 | | ms |
| switching frequency | | | 65 | | kHz |
| temperature coefficient | | | ±0.05 | | %/°C |

PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|--------------------------|------------------------|-----|-----|-----|-------|
| over voltage protection | hiccup, auto recovery | | | | |
| over current protection | | 110 | | | % |
| short circuit protection | hiccup, auto recovery | | | | |

SAFETY & COMPLIANCE

| parameter | conditions/description | min | typ | max | units |
|-------------------|---|---------|-------|-----|-------|
| isolation voltage | input to output | | 4,000 | | Vac |
| safety approvals | IEC62368-1/60950-1, UL62368-1/60950-1 | | | | |
| safety class | class II | | | | |
| EMI/EMC | EN 55032 Class B, FCC Part 15 Class B, EN 61000-6-3, EN 61000-3-2, EN 61000-3-3, EN 55024, EN 61204-3, EN 61000-6-1 | | | | |
| MTBF | as per MIL-STD-217F, at 115 Vac, 25°C, GB | 300,000 | | | hours |
| life time | at 40°C, 75% load | 3 | | | years |
| RoHS | yes | | | | |

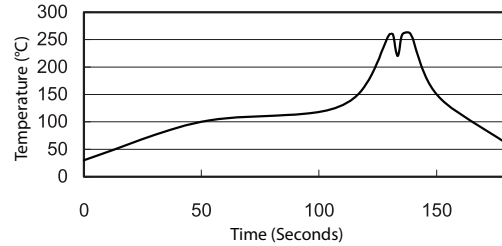
ENVIRONMENTAL

| parameter | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|------|-----|-------|
| operating temperature | see derating curve | -25 | | 70 | °C |
| storage temperature | | -40 | | 85 | °C |
| operating humidity | non-condensing | | | 93 | % |
| operating altitude | | | 5000 | | m |

SOLDERABILITY

| parameter | conditions/description | min | typ | max | units |
|----------------|----------------------------|-----|-----|-----|-------|
| wave soldering | see wave soldering profile | | | 260 | °C |

- Notes:
1. Soldering materials: Sn/Cu/Ni
 2. Ramp up rate during preheat: 1.4°C/s (from 50°C to 100°C)
 3. Soaking temperature: 0.5°C/s (from 100°C to 130°C), 60±20 seconds
 4. Peak temperature: 260°C, above 250°C for 3~6 seconds
 5. Ramp down rate during cooling: -10°C/s (from 260°C to 150°C)



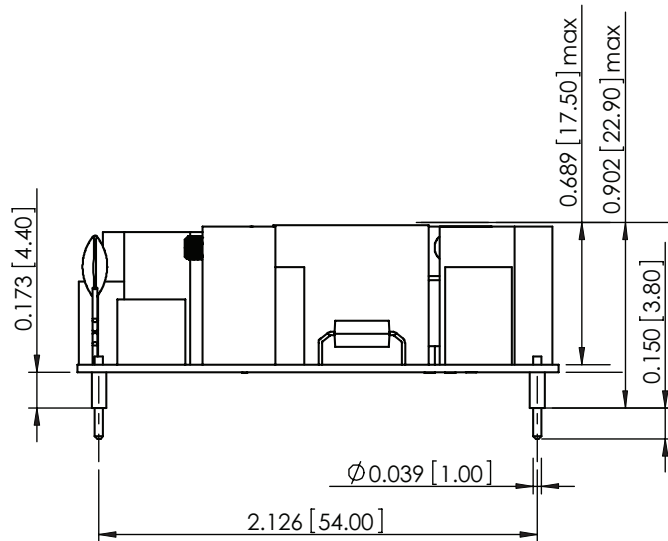
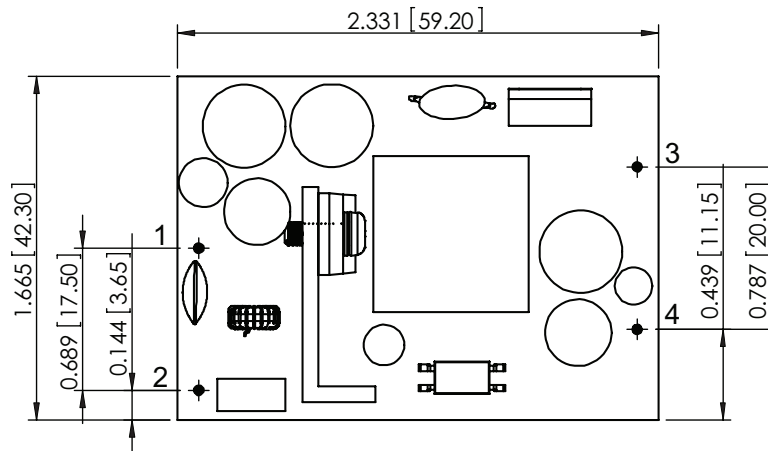
MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|------------|--|-----|-----|-----|-------|
| dimensions | 2.331 x 1.665 x 0.902 (59.20 x 42.30 x 22.90 mm) | | | | inch |
| weight | | | 42 | | g |
| cooling | natural convection | | | | |

MECHANICAL DRAWING

units: inch [mm]
 tolerance: X.XXX = ±0.020 [±0.50]

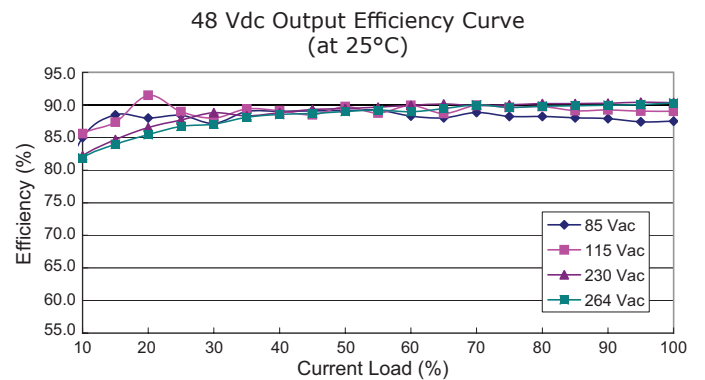
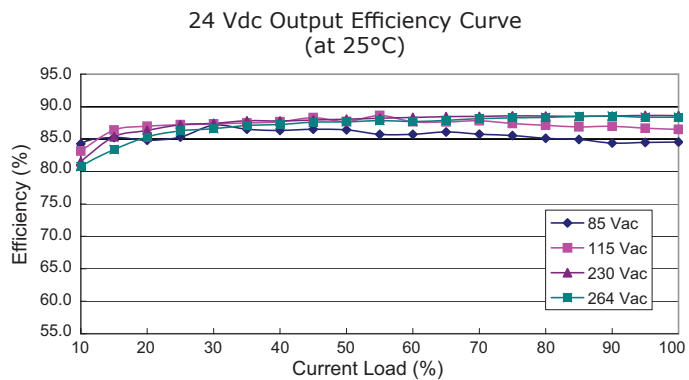
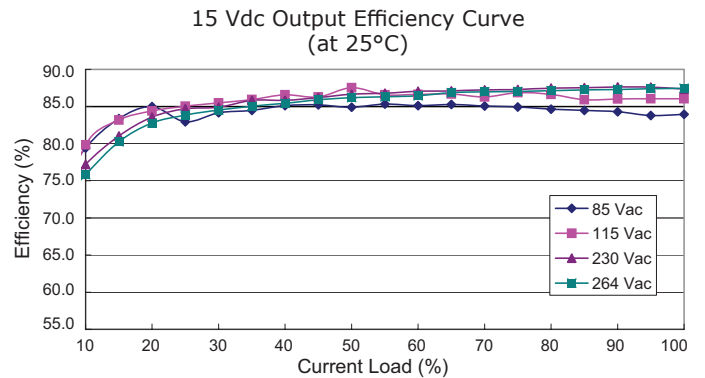
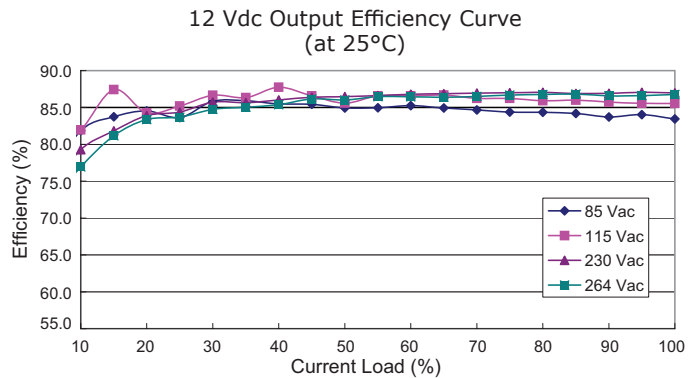
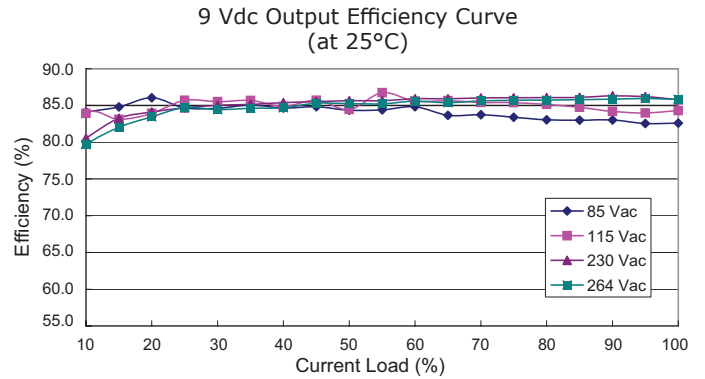
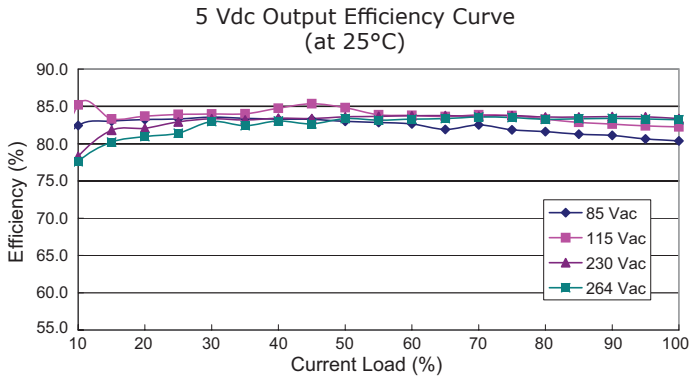
| PIN CONNECTIONS | |
|-----------------|----------|
| PIN | Function |
| 1 | ACN |
| 2 | ACL |
| 3 | -Vout |
| 4 | +Vout |



DERATING CURVE



EFFICIENCY CURVES



REVISION HISTORY

| rev. | description | date |
|------|------------------------------|------------|
| 1.0 | initial release | 02/23/2017 |
| 1.01 | increased operating altitude | 02/05/2018 |
| 1.02 | updated datasheet | 01/08/2019 |

The revision history provided is for informational purposes only and is believed to be accurate.



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CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

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